

November 16, 2004

Ms. Karen Smith
Director
Water Quality Division
Arizona Department of Environmental Quality
1110 W. Washington St.
Phoenix, AZ 85007

Dear Ms. Smith:

Thank you for submitting Arizona's 2004 Section 303(d) list of water quality limited water bodies. EPA carefully reviewed the State's listing submittal dated September 2, 2004, and follow up submittals dated September 9, 2004 and November 2, 2004. EPA commends that State for its strong effort to assemble and evaluate available water quality-related information, and for the clarity with which its assessment findings are presented in the submittal.

Based on our review of the submittal, EPA has determined that Arizona's 2004 list of 53 water quality limited segments (WQLSs) still requiring TMDLs partially meets the requirements of Section 303(d) of the Clean Water Act ("CWA" or "the Act") and EPA's implementing regulations. Therefore, by this order, EPA hereby partially approves and partially disapproves Arizona's 2004 Section 303(d) list. Specifically, EPA approves the State's decision to list the 53 waters and associated pollutants identified in Table 25 of the listing report along with the State's priority rankings for these waters and pollutants. However, EPA disapproves the State's decision not to list 19 additional water bodies, and additional pollutants for 8 waters already listed by the State, because EPA finds that these waters and pollutants meet the federal requirements for listing under Section 303(d). The statutory and regulatory requirements, and a summary of EPA's review of Arizona's compliance with each requirement, are described in the enclosure to this letter.

EPA is identifying for inclusion on Arizona's Section 303(d) list 19 additional water bodies, and additional pollutants for 8 waters already listed by Arizona. The specific waters and pollutants that EPA is adding are identified in the enclosed table. EPA will open a public comment period to receive comments concerning our decision to add waters and pollutants to the State's Section 303(d) list. After we consider comments received from the public, we will transmit the final 2004 Section 303(d) list to you.

EPA identified three situations in which waters and associated pollutants do not attain water quality standards but were not listed on the Section 303(d) list by the State. First, several waters violate narrative water quality standards because fish consumption advisories are currently in effect. Second, available water quality data and information for several waters support a determination that narrative water quality standards are violated due excessive levels of nutrients, turbidity, and/or bottom deposits of sediment. Third, available water quality data

indicate that several waters violate numeric water quality standards for specific pollutants.

EPA has received Arizona's long-term schedule for TMDL development for all waters on the State's 2004 Section 303(d) list. As a policy matter, EPA has requested that States provide such schedules. See Memorandum from Robert Perciasepe, Assistant Administrator for Water, to Regional Administrators and Regional Water Division Directors, "New Policies for Developing and Implementing TMDLs", August 8, 1997. I appreciate that you provided this schedule and look forward to discussing with you the State's future TMDL development plans. EPA is not taking any action to approve or disapprove this schedule pursuant to Section 303(d).

EPA's partial approval and partial disapproval of Arizona's Section 303(d) list extends to all water bodies on the list with the exception of waters within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove the Arizona list with respect to those waters at this time, EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters. EPA's decision to identify additional waters and pollutants for inclusion on the Section 303(d) list does not apply to any waters in Indian Country.

The public participation process sponsored by Arizona Department of Environmental Quality included solicitations of public comment through newspaper advertisements and preparation of a responsiveness summary explaining how the State considered public comment in the final listing decisions.

Thank you for your efforts to develop a sound 303(d) water body list for 2004. If you have questions on any of the above information, please call me at (415) 972-3572 or call Peter Kozelka at (415) 972-3448.

Sincerely yours,

/original signed by/

Alexis Strauss
Director, Water Division

Enclosure

Enclosure : Review of Arizona's 2004 Section 303(d) Water body List

Attachment to letter from Alexis Strauss, EPA Region 9 to Karen Smith, Arizona Department of Environmental Quality

Date of Transmittal Letter From State: Aug. 25, 2004

Date of Receipt by EPA: September 2, 2004

Date of Supplemental Transmittals From State: September 9, 2004 and November 2, 2004

Purpose

The purpose of this review document is to describe the rationale for EPA's partial approval and partial disapproval of Arizona's 2004 Section 303(d) water quality limited waters list. The following sections identify those key elements to be included in the list submittal based on the Clean Water Act and EPA regulations. See 40 C.F.R. §130.7. EPA reviewed the methodology used by the State in developing the 303(d) list and the Arizona's description of the data and information it considered. EPA's review of Arizona's 303(d) list is based on EPA's analysis of whether the State reasonably considered existing and readily available water quality-related data and information and identified all waters required to be listed.

Statutory and Regulatory Background**Identification of Water Quality Limited Segments (WQLS) for Inclusion on Section 303(d) List**

Section 303(d)(1) of the Act directs States to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, State or local authority, and (3) other pollution control requirements required by State, local, or federal authority. See 40 CFR 130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the

following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 CFR 130.7(b)(5). In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and readily available. See EPA 1991, Appendix C. While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR 130.7(b)(6) require States to include as part of their submissions to EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by EPA Region IX.

Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and EPA 1991.

Analysis of Arizona's Submission

EPA has reviewed the State's submission and has concluded that the State developed its Section 303(d) list in partial compliance with Section 303(d) of the Act and 40 CFR 130.7. Because Arizona's submission does not include all waters that meet Section 303(d) listing requirements, its list will be partially approved and partially disapproved, and the additional waters and pollutants that meet the listing requirements will be added to the final 2004 list. EPA's review is based on its analysis of whether the State reasonably considered existing and

readily available water quality-related data and information and identified all waters required to be listed.

EPA's Review of Arizona's Listing Assessment

In July 2000, Arizona enacted a statute governing its identification of impaired waters. See A.R.S. §49-232; A.A.C. R18-11-601 *et seq.* The State later adopted rules specifying its Section 303(d) assessment methodology. The rule and associated methodology provide that the State can consider only reasonably current credible and scientifically defensible data (A.R.S. §49-232.B), and that results of water sampling or other assessments of water quality shall be considered credible and scientifically defensible only if ADEQ has determined that each of several criteria set forth in the statute have been met (A.R.S. §49-232.B. (1 - 4)). Arizona determined that available data were unreliable in very few cases as part of its 2004 assessment. See ADEQ 2004 Technical Support Documentation, p. 8. EPA carefully reviewed the State's consideration of data quality in each of these cases and finds that the State's decision not to rely upon these excluded data sets was reasonable because the State identified legitimate problems with the data in question. In both cases, the State had supplemental monitoring data that supplied evidence that applicable standards were being attained for these waters.

ADEQ's rules establish data conventions that ADEQ uses to interpret data for its impaired water identifications (R18-11-603.A.), and identifies data that ADEQ shall not use for placing a water on its 303(d) list (R18-11-603.B). ADEQ's rules also identify conditions under which the State may not place a surface water or segment on its 303(d) list. See R18-11-604.C.1 (related to pollutant loadings from naturally occurring conditions), C.2 (related to data collected within a mixing zone or "under a variance or nutrient waiver"), and C.3 (related to activities or conditions regarding, e.g., canal and dam maintenance). EPA carefully reviewed the State's application of these provisions in the 2004 listing process and found that they were applied consistent with applicable State water quality standards.

ADEQ's rules also establish that, when evaluating a surface water or segment for placement on the 303(d) list, ADEQ must consider at least 20 spatially or temporally independent samples collected over three or more temporally independent sampling events (R18-11-605D.1), unless alternative listing criteria set forth in R18-11-605D.2 are satisfied. As explained below, EPA has determined that sufficient data were available for several waters with less than 20 samples to support a conclusion that several waters and pollutants not listed by the State violate State water quality standards and therefore meet federal listing requirements.

ADEQ based its 2004 Section 303(d) submittal almost entirely on its review of surface water quality data collected during the five-year period beginning January 1998 and ending December 2002 (ADEQ 2004, p. III-1). EPA finds it reasonable for the State to make its assessment based on water quality data collected during this timeframe because the more recent ambient water quality data are more likely to be representative and indicative of current water quality conditions. EPA notes, however, that it may be reasonable to consider sediment and tissue data that are older than five years in age because these types of data often change more slowly than ambient water column data and provide reliable information for assessing water quality conditions for a longer period of time. As discussed below, EPA considered some older

data concerning fish consumption advisories in its evaluation of the State submittal. ADEQ requested data from federal and state agencies, universities, and volunteer monitoring groups, and compiled data from ADEQ's permit compliance, enforcement and remediation programs.

EPA has reviewed Arizona's description of the data and information it considered, its methodology for identifying waters, and the State's responsive summary. EPA concludes that the State's decisions to list the waters and pollutants identified in Table 25 of its listing submittal are consistent with federal listing requirements. EPA's decision to approve these listings does not mean that EPA concurs with or is taking any action with respect to the State's listing methodology. EPA considered the State methodology in its decision to approve the waters and pollutants listed by the State. However, EPA also reviewed the data and information provided by the State as part of its listing submittal to determine whether the State listed all waters or pollutants that do not attain State water quality standards and meet federal listing requirements. EPA concludes that the State's decision not to list several waters and pollutants is not consistent with federal listing requirements. As discussed below, the available data and information are sufficient to support a conclusion that these waters are water quality limited and need to be listed pursuant to Section 303(d).

Except as noted below, the State was diligent in compiling data and completed a good synthesis of individual monitoring data for each water body (ADEQ 2004). ADEQ reviewed the data to determine if it met requirements established in the State's statute and rules related to the identification of impaired waters. Arizona compiled its 2004 Section 303(d) list based almost entirely on evaluation of water chemistry data only. The State did not carefully evaluate other types of monitoring data and information—bottom deposits, sediment contamination, bioassessments, physical integrity, fish kills and fish tissue for Section 303(d) listing purposes based on the rationale that its rules precluded their application absent approved water quality standards implementation procedures for narrative standards. As explained below, EPA has determined that these other types of data and information (i.e., fish consumption advisories, fish kills, and surrogate suspended sediment data) support a conclusion that several waters and pollutants not listed by the State violate State water quality standards and therefore meet federal listing requirements.

Arizona applied different methods for considering whether numeric water quality standards were exceeded depending upon whether available data were available for toxic pollutants or other pollutant types. In general, the State required fewer water quality standards exceedences in order to list toxic pollutants than it did to list other pollutant types. The State listed toxic pollutants in cases where more than 1 sample exceeded the applicable numeric standard in any three-year period. This approach is consistent with EPA's 1997 and 2003 assessment guidance documents and State water quality standards. EPA concludes that nearly all the State's toxic pollutant listing decisions on this basis are consistent with federal listing requirements. However, in a few cases discussed below, available data supports the conclusion that chronic water quality standards for mercury and copper are also violated and these waters should be listed.

The State required a higher rate of standards exceedences in order to list other types of pollutants (referred to here as conventional pollutants). The State listed waters in cases where

there was greater than 90% statistical confidence that a numeric standard for a conventional pollutant was exceeded at least 10% of the time (i.e., the so-called “binomial” approach). EPA questioned the analytical basis for this approach in our comments on the 2004 draft list as well as the 2002 list and impaired waters rule that codified this decision rule. EPA explained that ADEQ mis-interpreted EPA’s 1997 and 2003 assessment guidance and the 10% “raw score” approach regarding conventional pollutants. The State should not have considered this 10% as the allowable exceedence rate for many conventional pollutants because it is inconsistent with State water quality standards and therefore inappropriate for assessing these conventional pollutants.

For conventional pollutants, the State required a minimum sample size of 20 independent samples in order to support a listing determination. In our comments on the 2004 and 2002 listing decisions and the impaired waters rule, EPA expressed concern about the use of minimum sample sizes. Application of a 20-sample minimum could result in an assessment that missed waters that are highly likely to exceed applicable water quality standards. For example, the State did not identify Granite Creek on its Section 303(d) list although 5 out of 7 independent dissolved oxygen samples were in violation of the applicable water quality standards. This water was not listed by the State because the minimum sample size threshold was not met. However, under the State’s listing methodology, this water would have been listed if 20 samples had been available, because the listing criteria established under the State’s “binomial” approach would have been met (i.e., 5 exceedences in 20 samples yields greater than 90% statistical confidence that the standard is exceeded more than 10% of the time). Since the State’s assessment methodology for conventional pollutants has not been modified, EPA concludes that the State’s decision not to list several waters with less than 20 samples available was inconsistent with federal listing requirements because these waters had a sufficient number of standards exceedences to support a reliable conclusion that applicable standards are being exceeded.

EPA also evaluated waterbodies with larger data sets (more than 20 samples) for conventional pollutants to determine whether applicable water quality standards were exceeded. As discussed below, EPA concluded that available data were sufficient to support the conclusion that dissolved oxygen standards in one segment of Tonto Creek are violated.

In its 2004 list, the State retained most of the waters added by EPA to the State’s 2002 Section 303(d) list. The one water listed by EPA in 2002 that was dropped from the 2004 list was Granite Basin Lake, for which available data showed water quality standards are now attained.

The State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. EPA’s long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources. In *Pronsolino v. Marcus*, the District Court for the Northern District of California held that section 303(d) of the Clean Water Act (CWA) authorizes EPA to identify and establish total maximum daily loads (TMDLs) for waters impaired by nonpoint sources. *Pronsolino v. Marcus*, 91 F.Supp.2d 1337, 1347 (N.D.Ca. 2000). See also EPA’s 1991a; National Guidance for 1998 Section 303(d) Lists, Aug. 27, 1997.